



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF: **WU-16J**

November 19, 2004

Michael Baker, Chief  
Division of Drinking and Ground Waters  
Ohio Environmental Protection Agency  
Lazarus Government Center, P.O. Box 1049  
Columbus, Ohio 43216-1049

Dear Mr. Baker:

This letter transmits our final report which documents our findings and recommendations from the audit we conducted of your Division's UIC program on January 13-15, 2004. We believe the review went extremely well and we continue to be impressed with the high quality of the UIC program being implemented for Class I, IV, and V wells in Ohio. We also continue to be impressed with the outstanding level of commitment and dedication of management and staff.

Our overall findings indicate that the Ohio EPA's Division of Drinking and Ground Waters is operating a sound and effective UIC program. The Ohio EPA's current program continues to be consistent with the approved program and continues to be on track toward meeting program objectives and workplan commitments. The dedication and continued support for the UIC program exhibited by you and your staff is highly commendable. Of particular note is the agency's progress toward addressing high priority Class V wells in vulnerable ground water areas.

Thank you for your hospitality during our visit. We look forward to continuing to build on the partnership that has developed between our agencies over the years through technical exchange, information sharing, and coordination on national efforts. If you or members of your staff have questions or need additional information, please contact me at (312) 353-5089 or Valoria Robinson of my staff at (312) 886-4281.

Sincerely yours,

A handwritten signature in black ink, reading "Charles J. Elly". The signature is written in a cursive, flowing style.

Charles Elly, Chief  
Underground Injection Control Branch

Enclosure

cc: Lindsay Taliaferro, III  
Valerie Orr  
Lisa Morris

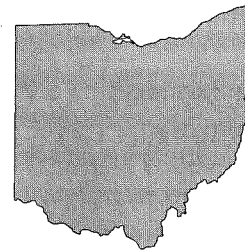
# ROUTING AND CONCURRENCE FORM

<b>TITLE:</b> <del>2004</del> 2004 Ohio EPA Audit Report			
<b>TO BE ROUTED UP TO AND SIGNED BY X</b>	<b>CONCURRENCES</b>	<b>INITIALS</b>	<b>DATE</b>
1	ORIGINATOR - Valoria Robinson	MR	11-16-04
	REVIEWERS- Steve Roy	SR	11/17/04
	<del>2</del> John Taylor	JET	
	EPA SECRETARY- Fredia Hardin	JH	11/19/04
	<i>Returned For Revisions Revisions made 11/16/04 MR</i>		
2	DIRECT IMPLEMENTATION CHIEF-		
3	UIC BRANCH CHIEF- Chuck Elly	JET	11/19/04
	DIVISION SECRETARY-		
4	DIVISION DIRECTOR-		
	REGIONAL ADMINISTRATOR'S SECRETARY-		
5	REGIONAL ADMINISTRATOR-		
6	WEB PAGE COORDINATOR-if appropriate		

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**U.S. EPA, REGION 5  
AUDIT OF  
THE OHIO ENVIRONMENTAL PROTECTION AGENCY  
UNDERGROUND INJECTION CONTROL PROGRAM  
FOR CLASS I, IV, AND V WELLS  
HELD JANUARY 13-15, 2004**



## **BACKGROUND**

The Ohio Environmental Protection Agency (Ohio EPA) received primacy for the UIC program in 1985 per the provisions of the Safe Drinking Water Act, Section 1422. Under these provisions, the Ohio EPA has enforcement authority to regulate Class I, IV, and V injection wells operating in Ohio to assure that such operations do not endanger drinking water sources. To retain primacy, the state must implement a program that is at least as stringent as Federal law. The state must also meet state program requirements per the primacy agreement and as set forth in 40 CFR Part 145. In support of their program, primacy state agencies receive federal funding in the form of continuing environmental program grants issued under the authority of 1443(b) of the Safe Drinking Water Act. The Ohio EPA receives approximately \$118,000 in Federal funds annually for its UIC program and, currently, manages 12 Class I wells, any Class IV wells found, and over 16,000 Class V wells. As part of the funding process, state agencies must submit a grant workplan outlining those activities that the state will carry out to fulfill program requirements. Federal regulations at 40 CFR, Part 35.150 require that U.S. EPA evaluate continuing environmental program work accomplished during the grant period against the objectives set forth in the grant work plan. Program evaluations also contribute to the fulfillment of U.S. EPA's obligation to ensure that states which have been delegated the authority to administer federal programs are meeting the terms of their delegation requirements.

As part of U.S. EPA efforts to meet its regulatory obligation for program evaluation, a review team from the U.S. EPA, Region 5's Underground Injection Control Branch conducted an in-depth audit of the Ohio Environmental Protection Agency's UIC Program on January 13-15, 2004. The main purpose of the audit was to assess the state's effort toward meeting base program requirements. The review team focused on the primary areas of program administration, permitting, and compliance monitoring and enforcement. Special focus was also given to the agency's effort to implement the new Class V rule.

## **EXECUTIVE SUMMARY**

Overall, the U.S. EPA found that the Ohio EPA runs an outstanding and exemplary UIC program. The Ohio EPA does an especially outstanding job of implementing the new Class V rule to control problem wells located in vulnerable ground water areas. This is particularly true given the state's workload; resource constraints; and challenging injection well cases that the state often encounters.

The following highlights characterize the Ohio EPA's UIC program.

- Strong Partnerships and Cross Program Coordination
- Effective Management Team and Highly Competent and Knowledgeable Technical Staff
- High Level of National Involvement and Participation
- Strong Field Presence
- Effective Compliance Assistance at Class I hazardous and Non-hazardous facilities
- Effective Strategies for Identifying Class V Wells and Gathering Class V Well Inventory Data
- Major Steps Toward Using GIS To Help Prioritize Work
- Excellent Progress On Update to Primacy Package
- Excellent Progress On Implementation of New Class V Rule
- Excellent Prioritization of Work and Leveraging of Funds & Resources
- Maximum Coordination & Information Exchange with U.S. EPA on Land Ban Facilities
- Active Class V Enforcement Program
- Special initiative shown through Elizabethtown Project

These highlights are discussed in more detail below.

**Strong Partnerships and Cross Program Coordination:** Ohio EPA develops and maintains strong partnerships and cross program coordination to manage the vast and diverse universe of shallow Class V disposal wells and more specifically to address those wells that pose the most significant threat to ground water resources. Through these partnerships, UIC management seeks ways to coordinate and use existing resources and efforts such that the level of ground water protection provided is optimized. The Ohio EPA works in concert with drinking water staff to identify high risk Class V shallow disposal wells in source water protection areas; with surface water staff to identify those wastewater disposal systems that classify as shallow Class V disposal wells and to develop safer disposal alternatives; with other state agencies to reduce regulatory overlap or conflict; and with trade associations to educate businesses about the UIC program and its requirements, increase awareness about the potential contamination threat that Class V wells pose to ground water, and encourage voluntary compliance at facilities with Class V wells. Coordination is also occurring with solid waste, underground storage tanks, and combined animal feeding operations programs to help identify and address high risk Class V wells.

**Effective Management Team and Highly Competent and Knowledgeable Technical Staff:** Ohio EPA has an effective management team and highly competent and knowledgeable technical staff who show a strong commitment to protecting ground water resources from unsafe underground disposal practices. Division management helps to foster that commitment. Division management makes the UIC program a priority, understands the key role of the UIC program in protecting state ground water resources, and provides a high level of support accordingly. Unit management has a clear direction and vision for the UIC program and works with staff and upper management to prioritize and implement work.

**High Level of National Involvement and Participation:** Ohio EPA plays an active role at the national level participating in national meetings, forums, workgroups, and pilot initiatives. As an

example, Ohio EPA volunteered for a pilot initiative through the Ground Water Protection Council to use PDAs in the field to enhance program implementation. Region 5 also participates in the pilot initiative and Ohio EPA's involvement will further enhance the project and facilitate a meaningful exchange of ideas, experiences, and lessons learned. The Ohio EPA has also been key in shaping national policies and determining program reporting formats and measures. The Division Director served as President of the Ground Water Protection Council, which is the national association of state ground water and UIC agencies, and which the U.S. EPA relies on to represent state interest in these programs. The GWPC provides a forum for stakeholder communication and research in order to improve governments' role in the protection and conservation of ground water.

**Strong Field Presence:** Ohio EPA maintains a strong field presence in the various counties to identify and address endangering Class V wells and at the various Class I facilities to ensure compliance with permit conditions. The Ohio EPA continues to conduct thorough in-depth inspections with detailed reports and conducts thorough follow-through as issues arise.

**Effective Compliance Assistance at Class I hazardous and non-hazardous facilities:** Ohio EPA staff has a good professional working relationships with Class I well facility staff and works closely with them to deter non-compliance; ensure proper operations to prevent problems; identify potential problems; and identify and enforce against non-compliance.

**Effective Strategies for Identifying Class V Wells and Gathering Class V Well Inventory**

**Data:** Past UIC education and outreach and inventory efforts have laid a solid foundation for the conducting of an active compliance monitoring program for Class V wells. The Ohio EPA developed and implemented various strategies for developing inventory and conducted various Class V education and outreach efforts working with trade associations, municipalities, and other regulatory programs. Through their efforts, the Ohio EPA has identified over 16,000 Class V wells. The Ohio EPA is currently in the process of field verifying their inventory and identifying those wells in source water protection areas.

**Major Steps Toward Using GIS To Help Prioritize Work:** The Ohio EPA has volunteered for a pilot initiative to use GIS and PDA equipment in the field. The equipment serves to help pinpoint the location of Class V wells and assess the relation of their locations to vulnerable ground water areas through GIS mapping.

**Excellent Progress On Primacy Package Update:** Excellent progress has been made on updating the state's primacy package to incorporate program revisions that have occurred since primacy was granted in 1984. The Ohio EPA plans to submit a final and complete primacy package by the end of 2004.

**Excellent Progress On Implementation of New Class V Rule:** The state is making excellent progress with its county by county approach to Class V rule implementation. The state is working closely with the SWP staff to identify high priority wells in SWPAs and has reviewed a number

of assessments. The state also has begun field verification of wells in the existing inventory for prioritization and action as deemed necessary.

**Excellent Prioritization of work and Leveraging Funds:** The Ohio EPA works with a broad range of programs and agencies to help manage the diverse universe of Class V wells. Ohio EPA also utilizes several funding sources to manage the UIC program for Class I, IV and V injection wells. Ohio law requires Class I well owners to pay fees for the number of wells they have permitted and the amount of waste that is annually injected into these Class I wells. The Ohio EPA uses these fees to regulate the Class I program which frees up federal grant funds for implementation of a comprehensive Class IV and V injection well program. The Ohio EPA has also used 106 funding on projects where non-point sources of ground water pollution are determined, including those caused by Class V injection wells. All activities are prioritized per the approved grant narrative of the US EPA UIC grant.

**Maximum Coordination & Information Exchange with U.S. EPA on Land Ban Facilities:** U.S. EPA and Ohio EPA continue to exchange information and discuss operational issues. The Ohio EPA and the U.S. EPA will need to coordinate during the process to review Class I land ban exemption renewals. Several hazardous Class I well facilities in Ohio have exemptions that are due to expire and operators will submit new petitions that will require review. The geology may need to be looked at closely as additional information has become available regarding faulting and earthquakes in the area. This effort will be a major use of resources for U.S. EPA. The specific state role will need to be determined. At a minimum, U.S. EPA will seek the state's input as documents are drafted.

**Active Class V Enforcement Program:** The Ohio EPA has an active Class V enforcement program with several cases underway.

**Special Initiative Shown Through Elizabethtown Project:** The Ohio EPA has been involved in the Elizabethtown project which studies contaminant sources in an unincorporated area. The project is multi-media and has a UIC Class V component. The Great Miami Public Water Supply in the area has been seeing increasing nitrate levels. There are 5-6 other public water supply wells and many private water wells in the area. They have identified 6-7 Class V wells mainly septic systems and dry wells. There are other potential contaminant sources in the area as well. The project has resulted in data collection, GIS mapping, and data analysis to determine the source of the nitrate contamination and has been a highly successful and interesting project. This effort has helped to get more visibility and funding for the Ohio UIC program as the risks to public health and connections with other programs become more widely recognized.

## **I. PROGRAM ADMINISTRATION**

Our agencies have developed a true partnership over the years through technical exchange, information sharing, and coordination on national efforts and we look for this to continue. We

also look for Ohio EPA management's continued support of the program and view the current commitment as exemplary.

#### **A. Grants/Funding**

The state continues to effectively manage its limited resources to implement a comprehensive UIC program in Ohio. Management support and administration has played a key role in ensuring that the UIC program has the resources it needs and that those resources are focused to the best benefit of Ohio's ground water resources. Class I permit fees also help to supplement the federal funding that the state receives for the UIC program. National efforts to increase funding for the UIC program have not yielded funding increases for state programs. The U.S. EPA will continue to process the Ohio EPA's continuing environmental program grant awards to ensure the program receives its due allotments in a timely fashion. The U.S. EPA was able to give the Ohio EPA a substantial early award which the state has indicated is timely as they plan to begin inspections in the spring.

#### **B. Staffing**

The Ohio EPA UIC program is fully staffed with no reported vacancies. The Unit consists of a Unit Supervisor who is responsible for overall program administration and four geologists who work directly with injection well facilities. Two of the four geologists work directly with the Class I facilities to ensure compliance with UIC regulations while the other two work to address Class V issues. One of the geologists, whose background is in ground water, was recently hired to help with the Class V program and has already proven to be an invaluable asset. The Unit also has access to other staff to help implement the program including an enforcement coordinator, a word processor, a programmer specialist, and geologists in 5 district offices.

#### **C. Quality Assurance Management Plan**

The Ohio EPA's QMP covering the UIC program is still in effect and will need to be renewed in 2005. Ohio EPA should begin evaluating the need for updates during 2004. Region 5 will be available to discuss required items for the renewal process. Ohio EPA received a Management Systems Review for 2004 but the focus of that review was mainly on Drinking Water and the Clean Water 106 program. The state offered to provide the U.S. EPA Region 5 UIC Branch staff with a copy of the final report.

#### **D. Primacy Program Update**

The U.S. EPA shared its comments on Ohio EPA's draft final primacy update package. Most of the comments focused on the program description and the memorandum of agreement between Ohio EPA and U.S. EPA. Comments were relatively minor with a majority of comments addressing typographical and citation errors. Ohio EPA is awaiting the Attorney General's Statement. Upon receipt, the state will forward a complete package to the Region for approval. A

complete primacy package includes (1) a letter from the Governor requesting program approval; (2) an Attorney General's Statement; (3) a Memorandum of Agreement between U.S. EPA and Ohio EPA; (4) a complete Program Description and associated documents that describe how the State intends to carry out its responsibilities, including any shared responsibilities with the Ohio Department of Health for the Class V program; (5) current copies of all applicable state statutes and regulations, including those governing state administrative procedures; and (6) documentation showing proper public notice of the State's intent to seek approval. Ohio EPA needs to be sure to include all the appropriate documents.

#### **E. Training/Conferences**

The Ohio EPA continues to train staff according to their professional development plans and agency/program requirements. Staff seem to be well seasoned on UIC technical issues. No regional training is scheduled. We will continue to coordinate as opportunities become available. The Region will continue to update the Ohio EPA on those training opportunities that meet state needs. State budgets are a concern and may result in Ohio EPA staff being unable to attend the January GWPC meeting. The state is hoping to be able to participate in the GWPC policy meeting in March.

#### **F. Data Management**

The Ohio EPA manages 12 Class I well files, a Class I well database, and thousands of Class V well records. Overall the state maintains an adequate paper trail of individual well activities. The state continues to make progress on developing a fully interactive Class V database. The Class V inventory is expected to increase due to the state's diligent inventory efforts. The state is working to field verify the existing wells in the inventory to make their status more accurate and current. GIS efforts will help implement the new Class V rule and identify wells in vulnerable ground water areas. The state will participate in a pilot initiative to help facilitate this. U.S. EPA Region 8 developed a UIC database in Access that Ohio EPA may be interested in taking a look at. U.S. EPA Region 5 agreed to share a copy with the state. In the interim, work continues at the national level to develop some form of a national database for the UIC program. A national database will probably take at least several years to complete and is not intended to replace existing state systems. The national database will instead be designed to extract key elements from each state's system.

#### **G. State Reporting**

National efforts continue to develop more meaningful reporting measures and methods. The state has played a major role in this effort participating on national workgroups and providing substantial input. In the interim, the Region continues to rely on the state to report program activities mainly through OMB approved 7520 forms, progress reports and/or self evaluations, and well inventory. The state timely submits all necessary documentation meeting regional and grant schedules. The Region submits this information to Headquarters to become part of national



UIC program data. There are also several information gathering exercises for the purposes of strategic planning, compliance screening, and performance evaluation that call for the state to report additional data. The state is extremely responsive and thorough when called upon to fulfill such requests.

## **H. Pollution Prevention**

The Ohio EPA UIC Unit continues to coordinate with their Pollution Prevention Office as needed and looks for opportunities to integrate pollution prevention into program activities.

## **I. Land Ban Coordination**

The U.S. EPA has issued exemptions from the restrictions placed on the land disposal of hazardous wastes by the Hazardous and Solid Waste Amendments of 1984 to the Resource Conservation and Recovery Act to three facilities operating Class I wells in Ohio. The exemptions contain conditions which are necessary for the demonstrations that the hazardous wastes injected will remain in the injection zones for as long as they remain hazardous. The Ohio EPA has incorporated these conditions into the state issued permits for the exempted facilities. All land ban facilities monitor normal injection well operations and report results to the Ohio EPA. The reporting of information to the Ohio EPA ensures that the demonstrations do remain valid. Ohio EPA has not reported any occurrences which would indicate that the wells at the exempted facilities have operated outside the permit limits. The U.S. EPA and the Ohio EPA will continue to exchange information on these facilities. Ohio EPA should continue to monitor no-migration limits.

## **J. Land Ban Exemption Renewals**

The federally issued land ban exemptions for hazardous Class I wells are due to expire and determinations will need to be made for renewal. In Ohio, exemptions expire for AK Steel in 2007; BP in 2009; and Vickery in 2011 based on the no-migration modeling for these facilities. While the U.S. EPA does not foresee a major state role at this point in this effort, some level of coordination should occur. The state indicated that a rift has been identified which warrants review to determine impact, if any, on the geology of areas near the wells. Any such changes may affect exemption renewal and exemption expiration dates. U.S. EPA is working to develop guidance for land ban operators that plan to submit petitions for exemptions as well as standard operating procedures for regulatory staff who review and process petitions. Once these documents are ready for comment, the U.S. EPA will share these documents with the state. In the meantime, the Ohio EPA should continue to monitor no-migration limits established as part of the previously approved petitions for exemption.

## **K. Joint Meeting with ODNR & OEPA**

A joint meeting was held between ODNR, OEPA, and U.S. EPA Region 5 to discuss a few interlapping issues. These issues included discussion of the QMP and potential need for

coordination and agreement between OEPA and ODNR for the purposes of alternative dispute resolution; primacy package update and needed coordination on this since both agencies share 1422 program responsibilities; and coordination on land ban exemption renewals.

*Potential Need for Alternative Dispute Resolution Between OEPA & ODNR on QA:* The Ohio DNR QMP was approved by Region 5 during the fall of 2003. Concurrent with the approval, Region 5 QA staff offered several suggestions to the Ohio DNR for consideration. One suggestion concerned alternative dispute resolution and the possible inclusion of Ohio EPA in the discussion since the agencies coordinate on several UIC issues. Both agencies concluded that this was not necessary in that their dealings with each other are mostly advisory and neither agency has the authority to make a final decision for the other. Any disputes that arise are handled internally or through the governor's office and is inappropriate to include in a QMP for the purposes of QA.

*Coordination on primacy package updates:* Both agencies are in the process of updating their primacy package documentation. The initial primacy package was approved in 1985 as a combined package including both agencies and both program authorities. Traditionally, 1422 authority for Class I, III, IV, and V wells and 1425 authority for Class II wells are handled separately with 1422 delegations going wholly to the state EPA and 1425 delegations going solely to state oil and gas agencies. The situation in Ohio is unique in that the 1425 agency which is the Ohio DNR also has responsibility for regulating Class III wells which constitutes a portion of the 1422 primacy delegation. U.S. EPA needs to determine the best approach for handling the updates given this unique situation. U.S. EPA needs to determine how to best package the updates for submission to Headquarters and whether the changes will be handled as substantial versus non-substantial. Non-substantial changes can be approved in the Region whereas substantial changes will require approval from Headquarters. Ohio DNR has had a major reorganization, has made changes to the administrative rules, has made major changes to the Class II program particularly in the area of annular disposal, and has made some minor changes in Class III permit issuance. The Class III rule changes alone are clearly non-substantial and will need to be incorporated somehow as part of the 1422 primacy update package. Ohio DNR will prepare what documentation is needed for Class III and handle all other changes under the 1425 update. Discussion was held on the program descriptions and how to best incorporate Class III material. It was concluded that more clarity from U.S. EPA Headquarters was needed. U.S. EPA agreed to consult with Headquarters and decide on an approach. In the meantime, it was agreed that each agency would proceed with planned updates.

*Potential Class I Disposal of Landfill Leachate:* ODNR gave a heads up on interest being expressed in the northern part of the state regarding trucking of landfill leachate to one of the existing Class I facilities for Class I well disposal. This is being considered due to concerns over surface treatment and surface disposal of the leachate. To date, no one has contacted the Ohio EPA regarding such interest.

*Coordination Between ODNR & OEPA on Land Ban Exemption Renewals* - Both ODNR and OEPA played some role in the last round of land ban petition review and approval. ODNR's Division of Geological Survey conducted a technical review of the petitions. They specifically reviewed regional and local geology, geohydrology, geochemistry, characteristics of injected fluids, and computer simulation of waste migration with respect to contamination of USDWs. OEPA also performed a technical review of the petition and was responsible for a list of tasks as identified in a land ban petition schedule. OEPA received a grant in the amount of approximately \$78,000 and was responsible for dispersing funds to ODNR as appropriate not to exceed the total amount of the grant. An MOA between OEPA and ODNR was drafted with attachments detailing each agency's specific responsibilities under the agreement and the grant. Additionally, ODNR provided matching funds in the amount of approximately \$26,000 for the effort. U.S. EPA anticipates that it is not likely that the state role will need to be as intensive in the review of petitions for renewal of existing exemptions since many basic geologic concerns were previously addressed. The previous grants were funded with supplemental RCRA funds made available during the first round of land ban petition reviews in the late 1980s. At this point, it does not appear that similar funds will be available for the renewal cycle.

## **II. CLASS I PERMITTING**

The U.S. EPA Region 5 review team examined the permitting files for the four Class I facilities. The results of the review are discussed in further detail below. Overall, it is evident that the Ohio EPA has a solid and comprehensive permitting program. The Ohio EPA runs a conscientious Class I permitting program and produces high-quality permits. The Ohio EPA permits meet technical and regulatory standards, set adequate conditions, and define compliance expectations. The state consistently provides copies of draft permits to the appropriate Region 5 staff and keeps the Region involved and abreast of permit activities. Technical exchange with Region 5 in this area has proved to be valuable and we look for this to continue. The Ohio EPA uses U.S. EPA and regional guidance, particularly MIT guidance, where applicable, and increases requirements where needed. The Ohio EPA encourages pollution prevention, waste minimization and treatment and includes the respective language in the Class I permits. The Ohio EPA is in the process of contracting to have the seismic reflection survey from the various Class I UIC facilities transferred from tapes to CD ROM which will save space and better preserve data.

### **A. BPCI**

The British Petroleum Chemical Incorporated (BPCI) permit was issued April 5, 2000 and expires April 5, 2005. The permit includes an automatic reduction in Maximum Allowable Surface Injection Pressure (MASIP) for specific gravity greater than 1.04 (the value used in calculating the printed MASIP) and this is programmed into the computer system that controls the wells to ensure that the correct limit is used at all times. No significant issues were identified.

#### **B. AK Steel (formerly Armco Steel)**

The AK Steel facility continues to operate under expired permits because unresolved, non-UIC environmental violations exist. Ohio law prevents the issuance of permits in such a situation. The permit renewal application has been thoroughly reviewed and several detailed Notices of Deficiency (NODs) sent to the company. The permit will require three to four months to complete once the case is resolved (final drafting, public noticing and public hearing, etc.). No significant issues were identified.

#### **C. Vickery Environmental, Inc. (VEI, formerly Waste Management, formerly Chem Waste Management)**

The permit renewal for this facility was issued July 12, 2002 and expires July 12, 2004. Specific gravity used in calculating MASIP for well #4 is lower than the other three wells since this well receives all alkaline injectate which is lighter than the other wastes. While reviewing monitoring reports, it was noted that the maximum injection pressure for well #2 for September 2003 is shown as 803 psi (well over the MASIP of 751 psi) but that this value is not supported by any of the other information included in the monthly report. Follow-up by the permit writer verified that this was just a typo and should have been 103 psi and the permittee will submit a corrected page. This is a very minor issue. No significant issues were identified.

#### **D. Arvesta Corp. (formerly Toman Agro, formerly Calhio, formerly ICI Americas, formerly Zeneca)**

The file contains several Notice of Deficiency (NOD) letters, which show very detailed review of the permit application. The letters are well-written and very detailed, clearly indicating what is expected from the applicant. The permit is a couple weeks from "pre-draft" stage when it will be sent to the company for initial comment. U.S. EPA will receive a copy of the draft permit for comment, as usual. Public hearings on draft permits for Arvesta are scheduled to occur. One minor issue identified was whether the maximum permitted injection pressure is truly in units of psi-gauge or psi-absolute. The permit allows unusual annulus pressure limitations of minimum of 300 psi, maximum of 600 psi (not differential). Since the permitted maximum allowed surface injection pressure (MASIP) is 1680 psi, there could be a greater than 1000 psi differential between the tubing and the annulus. This extreme differential may be of concern since any weakness in the tubing could cause a rupture and consequent leakage of the injectate into the annulus. No other significant issues were identified.

### **III. COMPLIANCE MONITORING, ASSISTANCE, & ENFORCEMENT**

The Region 5 review team was unable to review enforcement files and activities in significant detail due to lack of time and resources. Ohio EPA permit writers prepared very useful

compliance histories for all four facilities. In addition, discussions with staff and cursory review of compliance and program reporting documents revealed several conclusions.

#### **A. Review of Monthly Operating Reports (MOR)**

Ohio EPA has developed MOR checklists which are an effective way to facilitate MOR reviews. The checklists are a good idea and are something that the Region is also in the process of implementing. Review of the MOR checklists show that the Ohio EPA performs consistent and regular reviews of MORs. Per further discussions with staff, Ohio EPA routinely reviews the monthly operating reports for the 12 Class I wells, identifies potential permit violations from the monthly operating reports, and follows up on potential violations identified from their review in a timely manner.

#### **B. Continuous Monitoring**

Region 5 staff has prepared a preliminary draft position paper on continuous monitoring and will share the draft with Ohio EPA for input.

#### **C. Mechanical Integrity Testing**

The state is following required test frequencies to determine the mechanical integrity of Class I injection wells. Part 1 for leaks is conducted annually and Part 2 for fluid migration is conducted every 3 years. The Ohio EPA reviews testing plans required by permit prior to testing to assure methods are appropriate. Operators used approved methods and all Class I injection wells passed their mechanical integrity tests. The Ohio EPA field witnessed 100% of mechanical integrity testing.

#### **D. Inspections**

Field presence is definitely one of the Ohio EPA's strong points and it is evident that the state is very thorough and diligent in their efforts to monitor permitted injection well facilities for compliance. Based on discussions with staff and state reporting data, the Ohio EPA visits each facility quarterly, witnesses all testing, and continues to conduct very detailed annual inspections of the 12 Class I wells. These inspections include full compliance reviews taking into consideration virtually every permit condition. In addition to collecting information in the field, state staff review records in the office prior to the inspection to ensure that the inspector is intimately familiar with any recent developments at the facility to be inspected. The inspection includes an interview with the manager in charge of the well's operation to check whether all events which are relevant to the well's operation have been reported. The inspector witnesses complete tests of the monitoring and alarm systems. State staff review monitoring records and compare them with reports which the operator has submitted to the Ohio EPA to ensure that periodic reports reflect measured values.

#### **E. Class I Related Citizen Complaints**

The Ohio EPA did not receive any complaints about Class I wells which needed follow-up.

#### **F. Sampling & Quality Assurance**

Regarding sampling and quality assurance, the agency has not taken any samples. The Class I facilities have good quality assurance plans for sampling and other data collection activities. The Ohio EPA requires operators to sample the injected waste streams and submit the results quarterly. The Ohio EPA UIC program quality assurance activities are covered under an approved Quality Management Plan.

### **III. CLASS IV/V**

#### **A. New Class V Rule Adoption**

The state has adopted the new Class V rule. Coordination among U.S. EPA Region 5, U.S. EPA Headquarters, and Ohio EPA during the drafting of the state rule helped to facilitate approval and to ensure that the final state rule is at least as stringent as the Federal rule.

#### **B. State Implementation Plans for the New Class V Rule**

The state is making excellent progress with its county by county approach to Class V rule implementation. The Ohio EPA is effectively inventorying wells in source water protection areas by county. The state has completed review of source water assessment surveys for 9 counties—Sandusky, Miami, Picaway, Union, Madison, Green, Fairfield, Medina, and Coshocton. The state is averaging completion of 2 - 8 counties per year. At this rate, the state will complete surveys of all counties by 2045 at the latest which is necessary due to resource constraints. The state also has begun field verification of wells in the existing inventory for prioritization and action as deemed necessary. Staff have also used the approach to verify well status by phone as well as in the field. In addition, the state sent out notices to 400-500 businesses in unsewered areas using a yellow pages program to find high priority Class V wells. They are planning inspections in the Spring to align with budget timing when funds are available. The State is also planning NOVs and enforcement action against those facilities that refuse to close. State rules will ban MVWDWs state wide as of January 1, 2005. The state is developing a list of MVWDWs in SWAPs. Large Capacity Cesspools will be completely banned in Ohio as of April 5, 2005. The Health Department still approves what the OEPA is counting as cesspools and the state is working to address these facilities.

### **C. Aquifer Storage and Recovery (ASR)**

Region 5 briefed the Ohio EPA on the current developments with ASR. Currently, there are no ASR issues in Ohio but this may change as consultants are approaching communities in many states seeking to interest them in ASR projects. Some states already have existing ASR projects with problems. At the Green Bay, Wisconsin project, for example, tests revealed high arsenic levels in the stored water. Certain rock layers within the aquifer are laced with natural arsenic and other minerals. When the oxygenated Lake Michigan water was pumped into and through these layers, the oxygen reacted with the rocks causing minerals such as arsenic to leach out of the rock. There were also problems caused by disinfection by-products. Overall, there is a growing national concern regarding ASR projects and U.S. EPA wanted to make sure that the Ohio EPA was aware of the issue.

### **D. Education and Outreach**

The Ohio EPA has always had a strong education and outreach program which has helped to lay a solid foundation for the Class V program. Despite current intense focus on implementing the new Class V rule, the Ohio EPA continues to maintain some level of education and outreach effort. The following are a few examples.

- The Ohio EPA has given several presentations on the Elizabethtown project. Presentations were given at the GWPC Annual Forum in Niagara Falls, the Water Management Association of Ohio Fall meeting, and the State Coordinating Committee on Ground Water meeting.
- The Ohio EPA continues to maintain a UIC web page. The last update was done a year ago. A current update has been submitted to the agency's web page coordinator and changes should occur sometime in the next month. The state will add some new graphic illustrations and will update information on the well inventory, the Class I activities summary table, fact sheets, and rule pages.
- Staff continues to participate on the State Ground Water Coordinating Committee. This forum allows coordination with state, local groups, City Administrators, and trustees.
- Class I staff assigned to the Vickery facility hold bi-monthly meetings with citizens to discuss issues involving the facility.
- The UIC Unit has taken advantage of education and outreach opportunities with the Ohio Auto Truck Recycling Association.
- At the request of the Canton City Chamber of Commerce, UIC Unit staff gave a presentation at a one day seminar to increase awareness of the UIC program and the Class V regulatory requirements.
- The UIC Unit also follows up on numerous district calls from Division of Surface Water staff regarding Class V wells.

#### **E. Cross Program Coordination (Surface Water Program)**

The Ohio EPA annually updates the Memorandum of Agreement with the surface water program. Relations are better than ever and the two programs meet regularly to coordinate on Drinking Water, Ground Water, and UIC issues. The level of knowledge about Class V as it relates to the surface water program is increasing and both programs are seeing the benefit of coordination specifically where it concerns rule interpretation of what classifies as a Class V well. The Ohio EPA coordinates with surface water staff to identify those wastewater disposal systems that classify as shallow Class V disposal wells and to develop safer disposal alternatives. Surface water forces facilities to submit Class V well inventory as a surface water permit condition if the system meets the Class V definition.

#### **F. Cross Program Coordination (Drinking Water Program)**

The Ohio EPA works in concert with drinking water staff to identify high risk Class V shallow disposal wells in source water protection areas and has reviewed a number of assessments. Staff have reviewed approximately 900 systems to date and plan to utilize 106 funding to help with review of remaining systems.

#### **G. Cross Program Coordination (State Department of Health)**

The Ohio EPA worked with the Ohio Department of Health on an information mailing to counties. Counties may not understand how UIC regulations apply to systems that they may permit. Less than 5 % of the facilities that need to submit inventory do of all county approved permits issued for those systems that may classify as Class V wells. This need can be satisfied through formal agreement. As an example, the UIC Unit has an internal agreement with the South East District of Ohio EPA to require facilities as a permit condition to submit inventory to the UIC program for those surface water systems that classify as Class V wells. A similar formal agreement may be needed with the Ohio Department of Health to coordinate on multiple family residences that fall under UIC regulatory requirements. Both agencies reached an informal agreement to accept permit approval as long as the facility submits UIC well inventory but this needs to be formalized. The Ohio Department of Health is at least aware of UIC regulations and has the appropriate UIC program contact information.

#### **H. Cross Program Coordination (Other Areas)**

Coordination is also occurring with the solid waste, underground storage tanks, and combined animal feeding operations programs to help identify and address high risk Class V wells. The Ohio EPA is actively working specifically to keep Class V wells associated with Concentrated Animal Feeding Operations out of vulnerable ground water areas.



## **I. Class IV**

The state addresses any Class IV wells that are found and coordinates with RCRA to eliminate them as a potential source of ground water contamination. There were no reported Class IV wells at the time of the review.

## **J. Spring Valley Frontier Camp Ground/Caesar's Lake Mobile Home Park**

Several changes in ownership has delayed progress on this case. The Ohio EPA is attempting to work with the new current owner of the campground to bring resolution. The Ohio EPA intends to proceed with unilateral orders if the campground does not respond as required. If needed, the U.S. EPA agreed to send a notice of inquiry from the Federal level to the operator to try to get things moving and is prepared to take Federal enforcement action upon the state's request. The Ohio EPA feels that it is going through the process and is doing everything that is programmatically possible and, as such, does not feel that Federal enforcement is needed at this time.

## **K. Class V Enforcement**

Enforcement reports go to the Assistant Chief within the Division of Drinking and Ground Waters but only 2 people manage the workload for the entire Division. The Division has plans to hire 2 more staff members. In the interim, the Ohio EPA works with its existing resources to handle its caseloads. There are several Class V enforcement actions in the works which are being addressed. These include RECK Mobile Home Park, Ohio Carrier Corp. (aka Von Kaenel Trucking), Spring Valley Frontier Campground/Caesar's Lake Mobile Home Park, and others.

## **L. Class V Database**

The UIC Unit continues to update the Class V database as needed. The Ohio EPA has data on several sewer and unsewered areas in an Excel spreadsheet to cross check and update the well inventory against. Letters can then be computer generated from the data for those wells that are found in unsewered areas.

## **M. Bellevue & Flat Rock**

The Bellevue and Flat Rock areas continue to have storm water drainage issues. The geology of both areas consist of fractured limestone and there is very little natural surface drainage. A new facility is planned for Flat Rock which will require new stormwater drainage wells due to limited drainage options. Bellevue will have to deal with the same issue with the planned construction of a new hospital. These are challenging issues for the Ohio EPA to deal with as they seek to ensure ground water protection in these areas.

## **N. Ohio Carrier Corporation**

Ohio Carrier (aka Von Kaenel Trucking) is a Class V well site located in Dover, Ohio. The company submitted inventory on March 7, 2003. The site has two injection wells--one constructed in 1971 and the other constructed in 1975. There are 2 non-community, transient water wells in the area. These water wells have not received any hits above MCLs of which the Ohio EPA is aware. The injection well constructed in 1971 caved in and was capped in 1975. The injection well constructed in 1975 is a failing septic tank that is approximately 100 feet from a water well whose water supply is a ground water resource that is approximately 10 feet below excavation. The facility file contained a well schematic and the injection well depth is 8-9 feet. The Ohio EPA issued a proposed Findings & Orders on February 14, 2003. The company requested a teleconference. The date of the request was February 27, 2003. The teleconference was held on March 04, 2003. The Ohio EPA issued a letter and proposed Findings & Orders to the company on June 25, 2003. The company had been granted numerous extensions. The Ohio EPA issued final Findings & Orders with penalty on August 10, 2003. After negotiations with the company the penalty was reduced. Since that time, the Ohio EPA has had numerous conversations with the facility owners. Ohio Carrier has developed a history of not paying their UIC penalty on time. The Ohio EPA is considering referral to the State's Attorney General. The owner has paid some installments on the penalty making 2 of 3 payments. The Ohio EPA is working with the company to develop a contract with the owner. The company has submitted draft closure plans and sampling data. A meeting between the company and Ohio EPA is scheduled for Friday January 23, 2004.

## **O. Elizabethtown Project**

The Ohio EPA has been involved in the Elizabethtown project which studies contaminant sources in an unincorporated area. The project is multi-media and has a UIC Class V component. The main focus for UIC is Class V wells in the unsewered areas and determining links to areas with high nitrate levels. There are 5-6 public water supply wells and many private water wells in the area. The Great Miami Public Water Supply in the area has been seeing increasing nitrate levels. The Ohio EPA through the project has identified 6-7 Class V wells, mainly septic systems and dry wells in the area. There are other potential contaminant sources in the area as well. The project has resulted in data collection, GIS mapping, and data analysis to determine the source of the nitrate contamination and has been a highly successful and interesting project. The project also involves drinking water well sampling. The state is looking to expand the project and do a ground water quality characterization from the effort to identify the contaminant source that is causing the increased nitrate levels. It has been recommended that the Ohio EPA work with the Ohio Geologic Survey within the Ohio DNR on review, assessment, and analysis of well log and isotope data from the project. This effort has helped emphasize the viability and funding needs of the Ohio UIC program.

## **P. Region 5 Class V Strategy For Primacy States**

U.S. EPA informed the Ohio EPA that it is in the process of developing a Class V strategy with its primacy programs that identifies ways to enhance Class V program implementation. The

strategy would include general approaches as well as state specific items. U.S. EPA asked the state for input and the following suggestions were developed.

- **Voluntary Referral For Federal Enforcement:** Ohio may be willing to accept additional support from U.S. EPA on the Ohio Carrier Corp. (aka Von Kaenel Trucking) facility to set an example of how we can coordinate on non-complying Class V facilities. The U.S. EPA expressed interest in the Spring Valley Frontier case. No specific agreement was reached regarding case referral for Federal enforcement.
- **Federal Notices of Inquiry:** Instead of voluntary referral, it was suggested that the U.S. EPA send notices of inquiry to difficult or recalcitrant companies. Spring Valley Frontier could be the first pilot. The Ohio EPA will identify specific cases, when appropriate.
- **Regularly Scheduled Regional Class V Calls:** It was suggested that Region 5 U.S. EPA host regularly scheduled calls to share information about Class V program implementation. National Class V calls that include primacy state agencies would be an even better forum. Agenda items would be developed for each call. Possible agenda items could include such topics as approaches in dealing with MVWDWs, the status of ASR projects, and inventory approaches. The U.S. EPA Region 5 could involve its SEE field inspectors on some of the calls to share information about their experiences and to participate in discussions about various approaches. Callers could then discuss what approaches work best. The Region could explore potential satellite conference sessions. It was agreed that for each call there must be a strong, beneficial, and meaningful agenda. Other topics could include discussion on national updates, GWPC initiatives, how other states handle inventory, storm water drainage wells and ties to source water protection areas, national measures, and MVWDWs closure deadlines.
- **Class V Newsletter:** The Region could issue a quarterly newsletter which would summarize Class V efforts.
- **Communication:** More contact between programs on the regional level in the Class V area would be beneficial. Some communication is now occurring through the GWPC which provides a major opportunity for interaction particularly through its Class V workgroup. More contact is needed including meetings where budget talks and resource constraints do not dominate the discussion. The Region should also consider involving locals in discussions.
- **Training:** The Region can potentially have internet based training on various topics. Some UIC internet training has already been developed through the National Drinking Water Academy, and more is planned.
- **Operator Incentive Award Program:** Region 5 is working on an operator incentive award program to recognize exemplary and outstanding operators and facilities. The program is in its draft stages. The USEPA will provide the Ohio EPA more information as the program develops and seek state input as Region 5 may consult with primacy state agencies to extend the program to those operators and facilities that primacy states may recommend for recognition.

U.S. EPA will look into the various suggestions, subject to resource constraints.